IN THE CLAIMS

1.   (currently amended) An X-ray controlling method for an X-ray imaging apparatus for projecting X-rays from an X-ray tube onto a subject to be imaged and detecting transmitted X-rays, and producing an image based on detected X-ray signals, comprising the steps of:

setting an upper limit of an X-ray exposure dose to the subject to be imaged; and

modulating ~~the tube~~a tube current of the X-ray tube so that the exposure dose does not exceed the upper ~~limit.~~limit, wherein said modulating the tube current includes modifying the tube current based upon a ratio of the upper limit and a predicted value of the exposure dose.

2.   (original) The X-ray controlling method of claim 1, wherein said X-ray imaging apparatus is an X-ray CT apparatus.

3.   (original) The X-ray controlling method of claim 2, wherein said X-ray CT apparatus conducts imaging by a helical scan.

4.   (currently amended) The X-ray controlling method of claim 2, wherein said step of modulating the tube current is achieved by: finding ~~an exposure dose~~the predicted value based on an imaging protocol; and modifying the tube current set value in the imaging protocol when the predicted value exceeds said upper limit.

5.   (original) The X-ray controlling method of claim 4, wherein said tube current set value is specified for each slice position.

6.   (currently amended) ~~The X-ray~~An X-ray controlling method ~~of claim 5,~~for an X-ray imaging apparatus for projecting X-rays from an X-ray tube onto a subject to be imaged and detecting transmitted X-rays, and producing an image based on detected X-ray signals, comprising:

setting an upper limit of an X-ray exposure dose to the subject to be imaged;

modulating a tube current of the X-ray tube so that the exposure dose does not exceed the upper limit, wherein said X-ray imaging apparatus is an X-ray CT apparatus, said step of modulation is achieved by:

finding an exposure dose predicted value based on an imaging protocol;

modifying a tube current set value I in the imaging protocol when the predicted value exceeds said upper limit, wherein said tube current set value I specified for each slice position, and said modifying the tube current set value I includes changing the tube current set value I to $I' = I \cdot (Du / Dc)^{1/2}$, where said predicted value is denoted by Dc, and said upper limit is denoted by Du.

7.   (currently amended) An X-ray imaging apparatus for projecting X-rays from an X-ray tube onto a subject to be imaged and detecting transmitted X-rays, and producing an image based on detected X-ray signals, comprising:

a setting device for setting an upper limit of an X-ray exposure dose to the subject to be imaged; and

a modulating device for modulating ~~the tube~~a tube current of the X-ray tube so that the exposure dose does not exceed the upper ~~limit.~~limit, wherein said modulating device configured to modulate the tube current based upon a ratio of the upper limit and a predicted value of the exposure dose.

8.   (original) The X-ray imaging apparatus of claim 7, wherein said X-ray imaging apparatus is an X-ray CT apparatus.

9.   (original) The X-ray imaging apparatus of claim 8, wherein said X-ray CT apparatus conducts imaging by a helical scan.

10.   (currently amended) The X-ray imaging apparatus of claim 8, wherein

said modulating device finds ~~an exposure dose~~the predicted value based on an imaging protocol, and modifies the tube current set value in the imaging protocol when the predicted value exceeds said upper limit.

11. (original) The X-ray imaging apparatus of claim 10, wherein said tube current set value is specified for each slice position.

12. (currently amended) ~~The X-ray~~ An X-ray imaging apparatus ~~of claim 11,~~ for projecting X-rays from an X-ray tube onto a subject to be imaged and detecting transmitted X-rays and producing an image based on detected X-ray signals, comprising:

a setting device for setting an upper limit of an X-ray exposure dose to the subject to be imaged;

a modulating device for modulating a tube current of the X-ray tube so that the exposure dose does not exceed the upper limit, wherein said X-ray imaging apparatus is an X-ray CT apparatus, said modulating device finds an exposure dose predicted value based on an imaging protocol, modifies a tube current set value I in the imaging protocol when the predicted value exceeds said upper limit, and modifies ~~a tube~~ the tube current set value I to $I' = I \cdot (Du / Dc)^{1/2}$, where said predicted value is denoted by Dc, and said upper limit is ~~denoted by Du.~~ denoted by Du, and said tube current set value I specified for each slice position.

13. (currently amended) An X-ray imaging apparatus for projecting X-rays from an X-ray tube onto a subject to be imaged and detecting transmitted X-rays, and producing an image based on detected X-ray signals, comprising:

a calculating device for calculating a historical X-ray exposure dose value of an X-ray exposure dose to the subject to be imaged, wherein said calculating device configured to change a tube current based upon a ratio of a limit of the exposure dose and the historical exposure dose value; and

a display device for displaying the ~~calculated exposure dose.~~ historical exposure dose value.

14. (original) The X-ray imaging apparatus of claim 13, wherein said calculating device calculates the exposure dose based on historical imaging data for the subject to be imaged.

15.   (original) The X-ray imaging apparatus of claim 14, wherein said calculating device acquires the historical imaging data from a server.

16.   (original) The X-ray imaging apparatus of claim 13, wherein said X-ray imaging apparatus is an X-ray CT apparatus.